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to determine. I afterward found an empty nest about fifty yards from where the birds were taken.

On April 28th, 1900, I secured another male in the same field, about two hundred yards from where the other specimens were found. This was a smooth, clean bird and probably had not yet found a mate. Thus ends my experience with the Bachman's Sparrow.

Some other time, I trust I may be able to write of this bird, that it is "fairly common" in DeKalb County, Georgia.

ROBT. WINDSOR SMITH, *Kirkwood, Georgia.*

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## CROW LANGUAGE.

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While watching *Corvus americanus* at all seasons of the year and listening to their various cries, I have frequently been impressed by the individuality shown in their most common notes, no two birds appearing to have voices exactly alike, whether found in pairs, small companies or great flocks. Perhaps they are few collecting oologists who have not noticed the dissimilarity in the notes of the sexes about the nest. While not doubting but that they possess a simple language of their own, the difficulties of interpretation are greatly increased by the wide variation occasioned by this same individuality. In saying that the Crow probably possesses a language, it need not be inferred that it is meant to assume that it has acquired conversational powers, but merely through the articulation of a few sounds it is able to convey to its own species its sense of pleasure, fear, anger, etc., in other words a vocal code of signals familiar to its associates.

In my mind there is no question but that the manner of utterance is of higher value than mere difference in note. A note possesses various meanings according to the pitch and manner of uttering it. It would be difficult if not utterly impossible to discover and record the language or dialect of a savage tribe of our fellow human beings merely by a stolen and occasional hearing of scraps of conversations, then how much harder it would be

to fully interpret the Crow under similar conditions without being able to analyze their feelings and conditions, and without imperfect means for the correct portrayal of their voices. The national note of Crowdom is a loud and harsh *caw, cawh*, as given by Bendire, or *Khrah* according to Langille. It has variety of meanings, pitched high it may be a call, an alarm or to attract attention. Falling inflection:—answer to call, reassurance, an all is well signal, uttered with more than ordinary energy it denotes alarm, anger, or merely that the argumentative powers have been aroused. Softly—caution but not immediate danger, often used by sentinel and occasionally about newly constructed nest. A soft and caressing *Ca-awh* while working upon the nest, relieving brooding mate, or training young, sometimes heard, most frequently voiced by the male. The next most popular note is the clear and ringing *Co*, the most musical of the whole vocabulary. It is usually given four or five times in succession and is nearly always in the form of a call. *Kar-r-r-r-r* is ordinarily or brooding note of warning. Very soft if only to warn mate into silence, but hard and vicious if voiced in face of intruder. Bendire gives it as *Krab*; other modifications are *Ka-r-r-r* and *Kur-r-r-a*.

*Kar-ruck*, (emphasized on the last syllable) has an indescribable hollow, guttural, clicking sound, most frequently heard in the late winter or early spring, although I have heard it not infrequently late in November. Probably the best attempt at song, although I am inclined to attribute it largely to individuality, as I have marked birds in flocks during the winter and in certain groves in the breeding season which have regularly used it; while the majority do not appear to have included it in their vocabulary at all. The modification are *Kar-r-r-ruck*, *kar-rack*, and *Ku-rack*.

A loud and quick *clock-clock-clock* is rather unusual. It shares the peculiarity of sound of the previous note but is even more hollow. I have always noticed that the bird was at rest on or near the ground when uttering it. I have considered it as abnormal.

Another, are series of notes, was heard one cold day in

February, a low sputtering, rattling *Kek-ek-ek-ek-ek-ka-ah* repeated, at first suggesting a Kingfisher, from a single bird as it flew about near the ground, feeding.

The love note of the male is a *Cow-cow-cow-cow* or as Langille has it—*Chow-ow-ow-ow*, low and deep.

The female's love note is a series of strange cries, *Caw-caw-caw-caw-co-co-co*, beginning soft and nasal but after the first two notes increasing in force and measure until broken off.

As previously stated, Langille has recorded love notes of the male, but I believe Maynard to be the only ornithologist who has described at length the courtship of a pair, and in all probability he has too highly colored his description. Before giving my own version I will quote him, as his *Birds of Eastern North America* is not accessible to many: "It may seem absurd to talk about Crows singing, but having heard their performance, I can bear testimony to the excellence, that is comparatively speaking. I was once watching a pair of Crows that were building in a small grove near Newtonville, and, as I had succeeded in gaining a place of concealment not far from the birds, without attracting their attention, had a fine opportunity of observing their movements, while they were entirely unconscious of my presence. The first thing I noticed was a peculiar sound which somewhat resembled the cooing of a Dove, but it was far more musical. As only one of the birds was discernable from where I stood, I could not at first make out from what direction it came, but after a moment moved slightly when I saw at once the author of the singular melody was no other than a Crow, evidently a male; it was seated on a limb of a tree by the side of its mate and he behaved in an odd manner for so grave a bird. He would move sideways on his perch, bow his head, spread his tail, and droop his wings, at the same time giving utterance to a cooing note. The female watched him demurely all the while but made no demonstrations whatever, and, after performing some five minutes, both flew away."

My first witness of this highly interesting performance was in the afternoon of the cold day of April 20th, 1897, and from the notes taken on the spot it will be seen that no doubt is left as to the sexes. The female was about three hundred yards

from the newly constructed nest. She appeared entirely oblivious to my presence although the trees were yet destitute of foliage, but appeared very restless, constantly shifting her position from one tree to another a few yards at a time. Acting in the manner of a very hungry fledgling just out of the nest, with wings now drooping helplessly, now half extended, tail opening and closing, falling and rising; head thrown back and from side to side; accompanied by uncouth movements of the body; almost constantly uttering a series of strange cries, beginning soft and nasal but growing louder and faster after the first two notes: *Caw-caw-caw-caw-caw-caw-caw-caw-co-co-co-co-co*. The series of notes were often broken short, and from the bodily contortions and cries of agonizing entreaty, one would suppose that the bird was in the last struggles with death. This continued with brief movements of silence for about fifteen minutes, when I heard, some one hundred yards from the female and directly in the rear of my place of observation, a deep yet softly uttered *cow-cow-cow-cow* from the male, whose presence I had been in ignorance of up to the moment. The female continued her cries for about ten minutes, the male remaining quiet the same period, when a *cow-cow-cow* loud and full was answered by the female as before, immediately after which they both left their perches and flew as to a common center until a few yards separated them when the female turned pursued by the male in a zig-zag course below the tree tops; copulation having taken place in midair, the female returned and recommenced her cries but less frequently; the male having taken post at some distance. I have since observed the above described performance in other localities, though it must be confessed a less extravagant part was taken by the female, otherwise I would be compelled to regard it as a caricature rather than a normal trait, for I heard it again at 5.30 p. m. March 27th, 1898, and again on May, 6th, 1899, in the identical wood in which the first occurred. It was easily approached to within gunshot range, folding and spreading its wings, hopping or flying up one limb to another and down again in an exceedingly frenzied manner, uttering inarticulate cries similar to the voice of the young. This female was easily recognized by me on account of the

peculiar *Kar-ruck* note it uttered and protested all the Crow and Hawk nest robberies I committed within a radius of a half a mile of its stand. I cannot say for certain whether it had a mate in 1898 or not, although I did not note it about at the time; but investigation failed to discover the male in 1899, and the fact that I failed to take a set of eggs in the three years from this section of the woods although all nests were examined, is significant. The male may have joined another female or as it is highly probable that they mate for life, he may have been shot. The female was undoubtedly barren and to all appearance *insane*. It had probably received some injury about the brain, perhaps from a grain of shot. It was my intention to have secured it for examination but as it was not in its haunts in 1900, my opportunity had passed.

FRANK L. BURNS, *Berwyn, Penna.*

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### A WISCONSIN BIRD PARADISE.

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It was a beautiful afternoon the third week in May, when a friend and myself rode out about four miles into the country, tied our horse in a kindly farmer's yard and struck into the woods. At the edge of the woods a Rose-breasted Grosbeak was singing joyfully. We stood and looked at him for several minutes. A few rods farther on a Scarlet Tanager flew across our path and while I was looking at him my friend saw the Ovenbird walking sedately down a log. We soon came to a clearing, fringed around the edge with half grown maples and poplars, with a grove of beautiful large maples in the center. An old log house to one side with the dense woods all around. It was an ideal spot for birds, and we looked and looked and it seemed as if we could not admire it all enough. While admiring the scenery a loud chip caused us to look around, when we saw the Scarlet Tanager's beautiful mate. She looked at us for a second, then flew up into a tree, and upon following her with our eyes, saw she was perched beside her brilliant mate. Later on I saw them building a nest in an old dead tamarack tree in the dense woods. Following an old grassy road we came to an old tumbled down log bridge,